

Remarks

Claims 1-20 are presented for the Examiner's review and consideration. In this Response, claims 1-15 are amended, and claims 16-20 are added. Applicant believes the claim amendments and the accompanying remarks herein serve to clarify the present invention and are independent of patentability. No new matter has been added.

35 U.S.C. §112 Rejections

In the Office Action, Claims 1-15 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. For reasons set forth below, Applicant respectfully submits that this rejection should be withdrawn.

In the claim amendments, the preamble has been clarified in claim 1, and the remaining terms noted with respect to claims 1, 14, and 15 have been corrected. The remaining claims have otherwise been amended to address the rejection and clarify the invention.

In light of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the section §112 rejections.

35 U.S.C. §103 Rejection

Claims 1, 4-5, and 7-9 were rejected under 35 U.S.C. §103(a), as being unpatentable over Bacher *et al.* (U.S. 6,378,705, "Bacher"), in view of Paquette (U.S. 4,159,953, "Paquette"). Claims 1-6 and 9 were rejected under 35 U.S.C. §103(a), as being unpatentable over Bacher in view of Tyler (U.S. 4,021,343, "Tyler"). Claims 1-6, 9-11, and 13-15 were rejected under 35 U.S.C. §103(a), as being unpatentable over Steinberger (Austria AT410,759B, "Steinberger"), in view of Bacher, and further in view of Paquette. Claim 12 was rejected under 35 U.S.C. §103(a), as being unpatentable over Steinberger and further in view of Bacher. For reasons set forth below, Applicant respectfully submits that this rejection should be withdrawn.

Bacher

In Bacher, an "apparatus provides increased transport of thickened material toward the discharge channel. The apparatus includes at least one filter element having an inflow side that is

brushed over by scrapers to guide waste residues along the surface of the filter element to the discharge channel.” (Abstract).

As further stated in Bacher, “each scraper element 25 carries two bolts 26 on its outer periphery extending parallel with each other and inserted into corresponding bores 27 of the housing and are there resiliently supported by springs 28. This springy support of each scraper element 25 can be augmented or replaced by the scraper element 25 being pressed against the hollow cylinder 17 by the pressure of the infed plastics material, which pressure is exerted radially from the outside on the scraper element 25.” (C6L43-51).

In an alternative embodiment in Bacher, “In the area of the perforated zone 20 and directly next to it, these scraper elements 25 are pressed resiliently against the inner surface of the filter element 3. For this purpose, the scraper elements 25 each have radial bolts 34 on their inner side, the end of which bolts bear pistons 35, which are tightly guided in radial bores 36 of a central shaft member 37. This shaft member 37 is inserted in an axial bore 38 of the shaft 5 and positively connected thereto to rotate along with it. The pistons 35 are pressurized by a hydraulic medium located in a centrally mounted hydraulic chamber 39, whereby this pressure can be created by a spring 40 which acts on this medium via a piston 41 or by an external pressure-medium-source not illustrated.” (C7L42-54).

Thus, Bacher discloses increasing a pressure of a scraper using an external source of pressure, however, as noted in the Rejection, Bacher does not sense an upstream pressure, nor adjust the pressure of the scraper based on the sensed pressure.

Paquette

Paquette discloses “a slide filter device for filtering thermoplastic and other materials which become fluid or stiffen in response to temperature change, having rigid self-supporting slide plate means movable within a housing from an inlet port passageway to an outlet port passageway for supporting and carrying replaceable filter media across the path of fluid flow (i.e.: the ‘melt stream’) of the working material.” (Abstract).

As further stated in Paquette, “The filter plate 11 can be forced to move through the passageways 14A and 14B and to advance across the melt-stream path 16 by a pusher means 13 having a push rod 34 which in cooperation with a piston 13 makes contact with an end of the

slide plate 11. The push rod 34 and piston 13' can be activated by hydraulic means such as a fixed or variable displacement pump or a pump driven by a variable speed electric motor or the push rod itself can be activated by mechanical means driven by an electric motor.” (C4L8-17).

“The filter plate advancing means may cooperate with sensing means (see FIG. 7) which detects pressure drop across the filter media 12 and activates the pusher means 13, as may be required to maintain a desired limit on the variation (ΔP) of working pressure applied to the melt stream.” (C4L38-44).

“The stripper means 51 comprises a wedge-shaped rigid body 52 having first and second surfaces 53, 54, respectively, which meet at an acute angle in an edge 55. As is shown in detail in FIG. 3, a blade 67 is fastened 45 to the first surface 53 under a backing plate 68 held to the body 52 with bolts 69.” (C5L42-47).

“In addition, the knife mechanism can be made to function as a combination stripper and brake so as to apply a force cooperating with the force applied to advance the filter plate means across the melt stream to hold the filter plate sections together while resident in the melt stream. Braking force can be modulated by adjusting the temperature of the stripper knife.” (C2L52-58).

“It is desirable in practicing the invention to maintain successive filter plate members close together at their confronting ends for continuous filter-changing operation in a manner such that fluid working material in the fluid path 16 does not force the filter plate sections apart and flow between them and thus bypass the filter means, or deprive the filter media 12 (if the latter is continuous) of the support of the breaker plate portion 28. The net opposing forces exerted by the pusher mechanism 13 and the stripper means 51 can be made sufficiently large to hold the slide plate sections 11A, 11B together in the melt stream path 16. The temperatures of one or both of the stripper means body 52 and the heat-exchange devices 18, 19 may be adjusted to a value or respective values at which the seal material 25 with used filter media 12 can be most easily removed from the slide plate 11 while maintaining sufficient braking force contributed by the stripper means to hold successive sections of the filter plate together in the melt stream.” (C6L17-36).

With reference to Fig. 7 of Paquette, “In the illustrated regulating system, the hydraulic piston 13' receives hydraulic fluid (e.g.: oil) from a pump P which is controlled from a control

system 92... For automatic regulation a pressure transducer 94, pressure controller 95, and variable pulse generator 96 are substituted for the manual speed regulator 91. An estimated frequency is set on the variable pulse generator 96 and 60 the desired ΔP is set on the pressure controller 95. The true ΔP is read by the pressure transducer 94, which is designed to receive a pressure signal from the melt stream, and a signal from the pressure transducer is compared with the desired ΔP in the pressure controller 95. Any resulting deviation signal is transmitted to the variable pulse generator 96, and the pulse generator adjusts its frequency to reduce the deviation to zero.” (C7L45-68).

The preceding quotes from Paquette illustrate that the *pressure* with which *the stripper bears on the filter* of Paquette *doesn't vary*. Rather, the regulated force pertains to the force of a hydraulic piston which *pushes filters* across the feed stream, against the filtering pressure, and across the stripper which is *bolted in place*. The stripper can act as a brake *by being cooled*, thereby solidifying advancing material, but *not by changing a pressure* of the stripper pushing against the filter.

Initially, Applicant respectfully submits that the Rejection is improperly using hindsight reasoning, applying a general principal of a hydraulic piston responding to a sensed pressure, to the claimed element of adjusting a scraper pressure based on a sensed pressure, particularly where this feature of the invention, at least, is not suggested or taught by the references.

Additionally, in light of the portions of disclosure quoted above, it should be clear that a combination of Paquette and Bacher would not produce “an actuator connected to the pressure sensor and the contact member, operable to set a pressure applied to the stripper by said contact member, whereby a contact pressure of the stripper against the filter element is a function of the pressure detected by the pressure sensor” as recited in amended claim 1. Claims 16 and 17 contain similar recitations. Bacher does not detect a pressure, and Paquette does not change a contact pressure of a stripper using sensed pressure. While Paquette discloses using a sensed pressure to change hydraulic pressure of a piston to *displace a filter*, this does not correspond to changing a *pressure of a stripper* against a filter element, which is not suggested or taught by either reference.

Further, Paquette uses the stripper to remove a filter material, as well as the filtrate, and requires that a certain gap exists between the scraper and the filter body, whereby a particular depth of material remains as a seal. Accordingly, if the gap between the scraper and the filter were to be reduced, as by increasing a pressure upon the scraper, a reduced amount of material would remain, and the high pressure seal upon which Paquette depends would fail. Accordingly, a combination of Paquette and Bacher would not work.

Tyler

Tyler discloses a device “for delivering purified water on demand, which includes a reverse osmosis filter having an inlet for connection to a source of pressurized water, and a purified water outlet connected to a tank where the purified water enters a bladder. Unpurified water from the filter is connected to the tank on the outside of the bladder for forcing purified water through a purified water outlet.” (Abstract).

“In operation of the system to draw water from the spigot 83, the handle 107 is turned to open the control valves 73 and 85, thereby opening the lines 67, 72 and 96. Because of the lead given the valve 73, the lines 67 and 72 are opened initially. This relieves pressure from within the chamber 25 above the diaphragm 27 of the valve 12.” (C5L45-49). “This opens the valve 12 so that inlet water is permitted to flow from the line 10, past the seat 17, through the outlet port 13 and the line 14, into the reverse osmosis filter 15.” (C5L60-63).

Thus, Tyler discloses a valve which prevents input flow when there is no output flow. Tyler does not suggest or teach the use of pressure sensing in combination with a stripper. Tyler does not teach the use of a stripper at all, nor does Tyler suggest or teach stripping impurities using mechanical shear, Tyler instead being directed to the use of osmosis. Accordingly, as in Bacher, Tyler does not suggest or teach an actuator connected to a pressure sensor “operable to set a pressure applied to the stripper”, as recited in amended claim 1 and new claim 16, as there is no stripper. Claim 17 contains similar recitations. Accordingly the combination of Bacher and Tyler cannot obviate the claimed invention, as the combination does not disclose all the recited elements of the instant invention.

There is further no suggestion or teaching in Tyler of any actuator or pressure sensor, for any purpose, “whereby a contact pressure of the stripper against the filter element is a function

of the pressure detected by the pressure sensor”, as recited in amended claim 1 and new claim 16, or “a force which corresponds to the pressure detected by the pressure sensor” as recited in claim 17, as the valve in Tyler functions in a binary on/off capacity, either turning on supply pressure, or shutting it off. If there is any functional relationship, it is incidental, as the valve releases supply as soon as there is any appreciable drop in pressure, and as it is not the stated purpose of the valve to provide any sort of graduated or functional relationship between handle 107 and valve 12. For this reason, the combination of Tyler and Bacher is not only not suggested, but would not work.

Steinberger ('759)

Steinberger is cited for disclosing a stripper having an edge arranged diagonal to the filter element, and at a contact angle relative to the central plane of the filter [as in claims 10-11]. It is not clear how Steinberger is combined with Bacher and Tyler to obviate claim 1, for example, as cited in the rejection. Steinberger is not cited for changing a pressure of a stripper, and referring to the illustrations and abstract of Steinberger, it appears as if stripper 5 is solidly mounted to a housing. Accordingly, Applicant respectfully submits that Steinberger does not correct the deficiencies of either Bacher or Tyler with respect to claims 1 and 16, as described above.

Accordingly, Applicant respectfully submits that claims 1, 16, and 17 are patentable over a combination of Bacher, Paquette, Tyler, and Steinberger. As claims 2-15 depend from claim 1, and claims 18-20 depend from claim 17, these dependent claims necessarily include all the elements of their base claim. Accordingly, Applicant respectfully submits that the dependent claims are allowable over the cited references for at least the same reasons.

In light of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the §103 rejection.

Conclusion

In light of the foregoing remarks, this application is now in condition for allowance and early passage of this case to issue is respectfully requested. If any questions remain regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

No fees are believed to be due. However, please charge any other required fee (or credit overpayments) to the Deposit Account of the undersigned, Account No. 500601 (Docket No. 7400-X06-147)

Respectfully submitted,

/ Paul D. Bianco /

Paul D. Bianco, Reg. 43,500
Martin Fleit, Reg. 16,900

Customer Number: 27317
FLEIT GIBBONS GUTMAN BONGINI & BIANCO
21355 East Dixie Highway, Suite 115
Miami, Florida 33180
305-830-2600, fax 305-830-2605, pbianco@fggbb.com